

Attorney Docket No.: J3651(C)
Serial No.: 10/506,374
Filed: September 2, 2004
Confirmation No.: 1186

REMARKS

Claim 1 has been amended to specify that the hair treatment composition is a styling product. See, for example, claim 9 (specifying that the composition is a hair styling composition), and page 23, lines 14 to 25 specifying a variety of product forms and noting that preferably the compositions are for use in styling human hair. Claim 1 has been further amended to specify units from which the polyacrylate or polymethacrylate blocks are derived. See the specification at page 16, lines 20 to 29.

Claim 9 has been amended to specify that the hair treatment composition is in the form of a hair spray, mousse, tonic or gel. See the specification at page 24, lines 26 to 30. Claims 10 to 15 have been amended to maintain consistency of nomenclature. New claims 17 and 18 specify the solubility of the ABA block copolymer in water, ethanol and mixtures thereof. See the specification at page 7, lines 25 to 29. New claim 19 specifies the formula of the divalent linker group. See page 8, line 22 to page 9, line 17. Claim 16 is cancelled without prejudice.

Entry of the foregoing amendments is respectfully requested.

Claims 1-16 stand rejected under 35 USC 103(a) over Frechet et al. (US2002/0160026) in view of Slack et al. (Macromolecules 1998, 31, 8503-8508) and in view of Adams et al (US 2002/0098214). This rejection is respectfully traversed.

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The subject invention is directed to hair treatment compositions, in particular, hair styling products that include, as a styling aid, an ABA block copolymer wherein the A groups are polyacrylate blocks or polymethacrylate blocks and the B group is a poly(ethylene glycol) (PEG). Among the ABA block copolymers are polymers wherein the A and B blocks are connected by a divalent linker group. Notwithstanding that the ABA block copolymers are relatively highly soluble in water/alcohol solvent systems, the leave-on styling products perform very well under high humidity conditions. In certain preferred embodiments, the A and B blocks are joined through divalent linkers via O-C, N-C or S-C bonds. Preferably, the linker is selected from:

-R-C(O)-O- ;

-R-O-C(O)-O- ;

-R-C(O)-N(R')- ;

-R-O-C(O)-N(R')- ; or

-R-N(R')-C(O)-N(R'')- ;

in which R is a divalent, optionally substituted, linear or branched C₁-C₁₈ hydrocarbon radical (such as C₁-C₁₂ alkylene), and

R' and R'' are independently selected from monovalent, optionally substituted, linear or branched C₁₋₁₈ hydrocarbon radicals.

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Frechet et al is directed to cosmetic or personal care compositions that contain certain thermoplastic elastomers, including ABA block copolymers having core and flanking polymers. At paragraph 0041 Frechet et al. discloses that "preferably, the flanking polymer and/or the core polymer, more preferably both the core polymer and the flanking polymer, comprise backbones which are obtainable by free radical polymerisation of vinylic monomers." Among the ABA block copolymers disclosed by the citation are block copolymers wherein the core polymer is a copolymer of two or more different acrylate esters and the flanking polymers are random copolymers of an acrylamide with one or more other vinylic monomers.

While Frechet et al. reads on a great many different polymers, there is nothing in the citation that discloses block copolymers having the particular ABA configuration described by the subject claims. The Office Action relies on Slacker et al. as teaching block copolymers having a PEG core.

Slacker et al. discloses ABA block copolymers that contain double chain hydrophobic moieties (A) attached to each end of a PEG chain (B). The block copolymers have application in hydrogels for biomedical applications. More particularly, the hydrophobic moieties (A) are double chain 3,4- (alkoxy)benzoic acid moieties. There is nothing in Slacker et al. that discloses or suggests ABA block copolymers having the polyacrylate or methacrylate blocks A required by the subject application. Nor is there anything in the citation related to hair styling applications.

It is respectfully submitted that there is nothing would motivate one skilled in the art reading Frechet et al. and Slacker et al. to selectively formulate an ABA block copolymer having the claimed structure. The disclosure of Slacker et al. is specific to ABA copolymers in which the A blocks are 3,4-(alkoxy)benzoic acid moieties, which moieties are seemingly required to obtain the gelling benefits therein described, i.e., gellation of lamellar liquid crystalline fluid L_a phases through cross-bridging of ABA

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triblock copolymers between adjacent lipid membranes of hydrogels. More particularly, there is nothing in Slacker et al. that discloses or suggests ABA block copolymers having the polyacrylate or methacrylate A blocks described by the subject claims, nor is there anything that discloses or suggests the use of ABA type block copolymers having a PEG B block in hair styling applications. In sort, Slacker et al. discloses different polymers in different applications.

Adams et al. is directed to polysiloxane block copolymers having a block copolymer built up from units of the general formula $[A]L[B]$ in which A is a polymeric block built up from radically polymerizable monmer, B is a polysiloxane block and L is divalent linker. Although Adams et al. discloses linking groups such as are described by the subject application, the polysiloxane block copolymers therein described are not PEG block copolymers of the subject invention.

Selecting and combining moieties that provide the properties required for a particular application involves more than general knowledge of the existence of the moieties from which the polymers can be fabricated. It is respectfully submitted that there is nothing in the citations individually that would suggest their combination in the manner of the subject invention or that discloses or suggests that the ABA block copolymers described by the subject claims would be suitable for hair styling applications. Indeed, the hydrophilic nature of the PEG block might suggest that the styling ability of the polymer would be significantly compromised under conditions of relatively high humidity and in fact teach away from the subject invention.

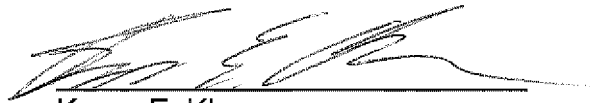
It is respectfully submitted the outstanding Office Action fails to make a case of prima facie obviousness regarding the subject claims and that the combination of Frechet et al. with Slacker et al. and/or Adams is mere hindsight suggested only by the subject invention.

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In view of the foregoing remarks reconsideration and allowance of the subject claims is respectfully requested.

If a telephone conversation would be of assistance in advancing the prosecution of the present application, applicants' undersigned attorney invites the Examiner to telephone at the number provided.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'K. E. Klumas', written over a horizontal line.

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